UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,524	07/14/2006	Lajos Szente	OP/4-33272A	2790

1095 7590 03/13/2007

NOVARTIS
CORPORATE INTELLECTUAL PROPERTY
ONE HEALTH PLAZA 104/3
EAST HANOVER, NJ 07936-1080

EXAMINER	
HENRY, MICHAEL C	
ART UNIT	PAPER NUMBER
1623	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/559,524	SZENTE ET AL.	
	Examiner	Art Unit	
	Michael C. Henry	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 8-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 8-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/6/05 & 7/14/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-5, 8-11 are pending in application

Information Disclosure Statement

The information disclosure statement filed complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. It has been placed in the application file and the information referred to therein has been considered as to the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3 and 5 recite the phrase "adopted to". However, the claims are indefinite because it is unclear how the composition must be altered or changed in order to be considered one that is adopted. That is, it is unclear what constitutes an adopted composition as compared to one that is not adopted.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loftsson et al. (Acta Ophthalmologica Scandinavica, (2002 April) Vol. 80, No. 2, pp. 144-50, Ref: 51

Journal code: 9507578. ISSN: 1395-3907) in view of Yamamura et al. (Chemical & Pharmaceutical Bulletin (1991), 39 (10), 2505-8).

In claim 1, applicant claims "A pharmaceutical composition comprising a per(3,6-anhydro)cyclodextrin, a pharmaceutically effective drug and a carrier. Claim 2 and 4 is drawn to the composition of claim 1, wherein the per(3,6-anhydro)cyclodextrin are specific and includes heptakis(3,6-anhydro)-β-cyclodextrin and wherein the per(3,6-anhydro)cyclodextrin is of specific %. Claims 3 and 5 are drawn to the composition of claim 1, wherein the composition is adopted to topical administration and for use in or around the eye.

Loftsson et al. disclose that cyclodextrins are cylindrical oligosaccharides with lipophilic central cavity and hydrophilic outer surface and that they can form water-soluble complexes with lipophilic drugs, which hide in the cavity (see abstract). Furthermore, Loftsson et al. disclose that cyclodextrins can be used to form aqueous eye drop solutions with lipophilic drugs, such as steroids and some carbonic anhydrase inhibitors and that they increase the water solubility of the drug, enhance drug absorption into the eye, improve aqueous stability and reduce local irritation (see abstract). In addition, Loftsson et al. disclose that cyclodextrins are useful excipeients in eye drop formulations of various drugs, including steroids of any kind, carbonic anhydrase inhibitors, pilocarpine, cyclosporins, etc. (see abstract).

The difference between applicant's claimed composition and the composition of Loftsson et al. is that Loftsson et al. do not exemplify the use of a cyclodextrin that is a per(3,6-anhydro)cyclodextrin, in their composition.

Yamamura et al. disclose a cyclodextrin, heptakis(3,6-anhydro)-β-cyclodextrin, that is a per(3,6-anhydro)cyclodextrin (see abstract).

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made in view of Loftsson et al. and Yamamura et al., to have prepared a composition comprising any cyclodextrin such as Yamamura et al.'s per(3,6-anhydro)cyclodextrin, heptakis(3,6-anhydro)-β-cyclodextrin together with a pharmaceutically acceptable drug and a carrier (such as water) to be used as an eye formulation or solution, since Loftsson et al. disclose that cyclodextrins can be used to form aqueous eye drop solutions with lipophilic drugs, such as steroids and some carbonic anhydrase inhibitors and that they increase the water solubility of the drug, enhance drug absorption into the eye, improve aqueous stability and reduce local irritation.

One having ordinary skill in the art would have been motivated, in view of Loftsson et al. and Yamamura et al., to have prepared a composition comprising any cyclodextrin such as Yamamura et al.'s per(3,6-anhydro)cyclodextrin, heptakis(3,6-anhydro)-β-cyclodextrin together with a pharmaceutically acceptable drug and a carrier (such as water) to be used as an eye formulation or solution, since Loftsson et al. disclose that cyclodextrins can be used to form aqueous eye drop solutions with lipophilic drugs, such as steroids and some carbonic anhydrase inhibitors and that they increase the water solubility of the drug, enhance drug absorption into the eye, improve aqueous stability and reduce local irritation. It should be noted that the preparation or use of specific percent (%) of a composition the per(3,6-anhydro)cyclodextrin in said composition depends on factors such as the severity of the eye condition that is to be treated, the physical property (such as solubility) of drug used.

In claim 8, applicant claims "A method of improving drug permeability through a tissue, which method comprises the steps of: conventionally admixing an effective amount of a per(3,6-

anhydro)cyclodetrin, an effective amount of a drug, a carrier, and optionally one or more furthermore ingredients selected from the group of buffers, tonicity enhancing agents, preservatives, solubilizers, stabilizers/solubilizers, and complexing agents; and administering said pharmaceutical composition comprising said per(3,6-anhydro)cyclodetrin to said tissue". Claim 9 is drawn to the method of claim 8, wherein said tissue is selected from mucus tissue and ocular tissue. Claim 11 is drawn to the method of claim 9, wherein the mucus tissue is corneal epithelial cells and the ocular tissue is conjunctival cells.

Loftsson et al. disclose that cyclodextrins can be used to form aqueous eye drop solutions with lipophilic drugs, such as steroids and some carbonic anhydrase inhibitors and that they increase the water solubility of the drug, enhance drug absorption (i.e., increase the permeability) into the eye (i.e., eye tissue), improve aqueous stability and reduce local irritation (see abstract). In addition, Loftsson et al. disclose that cyclodextrins are useful excipeients in eye drop formulations of various drugs, including steroids of any kind, carbonic anhydrase inhibitors, pilocarpine, cyclosporins, etc. (see abstract). In addition, Loftsson et al. disclose that cyclodextrins are useful excipeients in eye drop formulations of various drugs, including steroids of any kind, carbonic anhydrase inhibitors, pilocarpine, cyclosporins, etc. (see abstract). Also, Loftsson et al. disclose that cyclodextrins facilitates eye drop formulations for drugs that otherwise might not be available for topical use, while improving absorption (i.e., improves drug permeability) and stability and decreasing local irritation (see abstract). In other word, this implies that cyclodextrins improves the drug permeability (i.e., it improves absorption of the drug) when it is topically applied to the eye or eye tissue (such as ocular tissue or corneal epithelial cells).

The difference between applicant's claimed method and the method disclosed by Loftsson et al. is that Loftsson et al. do not exemplify the use of a cyclodextrin that is a per(3,6-anhydro)cyclodextrin, in their composition.

Yamamura et al. disclose a cyclodextrin, heptakis(3,6-anhydro)-β-cyclodextrin, that is a per(3,6-anhydro)cyclodextrin (see abstract).

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made in view of Loftsson et al. and Yamamura et al., to improve the permeability of a drug (such as pilocarpine) by preparing a composition comprising any cyclodextrin such as Yamamura et al.'s per(3,6-anhydro)cyclodextrin, heptakis(3,6-anhydro)-β-cyclodextrin together with a said drug and a carrier (such as water) to be applied to the eye (i.e., eye tissue), since Loftsson et al. disclose that cyclodextrins can be used to form aqueous eye drop solutions with lipophilic drugs and enhances drug absorption (i.e., improves drug permeability) into the eye (i.e., eye tissue).

One having ordinary skill in the art would have been motivated, in view of Loftsson et al. and Yamamura et al., to improve the permeability of a drug (such as pilocarpine) by preparing a composition comprising any cyclodextrin such as Yamamura et al.'s per(3,6-anhydro)cyclodextrin, heptakis(3,6-anhydro)-β-cyclodextrin together with a said drug and a carrier (such as water) to be applied to the eye (i.e., eye tissue), since Loftsson et al. disclose that cyclodextrins can be used to form aqueous eye drop solutions with lipophilic drugs and enhances drug absorption (i.e., improves drug permeability) into the eye (i.e., eye tissue).

In claim 10, applicant claims "A method of enhancing the bioavailability of a pharmaceutically effective drug, which method comprises conventionally admixing an effective amount of a per(3,6-anhydro)cyclodetrin, an effective amount of a drug, and a carrier.

Loftsson et al. disclose that cyclodextrins can be used to form aqueous eye drop solutions with lipophilic drugs, such as steroids and some carbonic anhydrase inhibitors and that they increase the water solubility (i.e., enhance the bioavailability) of the drug, enhance drug absorption (i.e., enhance the bioavailability) into the eye (i.e., eye tissue), improve aqueous stability and reduce local irritation (see abstract). In addition, Loftsson et al. disclose that cyclodextrins are useful excipeients in eye drop formulations of various drugs, including steroids of any kind, carbonic anhydrase inhibitors, pilocarpine, cyclosporins, etc. (see abstract). In addition, Loftsson et al. disclose that cyclodextrins are useful excipeients in eye drop formulations of various drugs, including steroids of any kind, carbonic anhydrase inhibitors, pilocarpine, cyclosporins, etc. (see abstract). Also, Loftsson et al. disclose that cyclodextrins facilitates eye drop formulations for drugs that otherwise might not be available for topical use, while improving absorption (enhancing the bioavailability) and stability and decreasing local irritation (see abstract). In other word, this implies that cyclodextrins improves the drug permeability (i.e., enhances the bioavailability) when it is topically applied to the eye or eye tissue (such as ocular tissue or corneal epithelial cells).

The difference between applicant's claimed method and the method disclosed by Loftsson et al. is that Loftsson et al. do not exemplify the use of a cyclodextrin that is a per(3,6-anhydro)cyclodextrin, in their composition.

Yamamura et al. disclose a cyclodextrin, heptakis(3,6-anhydro)-β-cyclodextrin, that is a per(3,6-anhydro)cyclodextrin (see abstract).

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made in view of Loftsson et al. and Yamamura et al., to enhance the bioavailability of a drug (such as pilocarpine) by preparing a composition comprising any cyclodextrin such as Yamamura et al.'s per(3,6-anhydro)cyclodextrin, heptakis(3,6-anhydro)-β-cyclodextrin together with a said drug and a carrier (such as water) to be applied to the eye (i.e., eye tissue), since Loftsson et al. disclose that cyclodextrins can be used to form aqueous eye drop solutions with lipophilic drugs and enhances drug absorption (i.e., enhances the bioavailability) into the eye (i.e., eye tissue).

One having ordinary skill in the art would have been motivated, in view of Loftsson et al. and Yamamura et al., to enhance the bioavailability of a drug (such as pilocarpine) by preparing a composition comprising any cyclodextrin such as Yamamura et al.'s per(3,6-anhydro)cyclodextrin, heptakis(3,6-anhydro)-β-cyclodextrin together with a said drug and a carrier (such as water) to be applied to the eye (i.e., eye tissue), since Loftsson et al. disclose that cyclodextrins can be used to form aqueous eye drop solutions with lipophilic drugs and enhances drug absorption (i.e., enhances the bioavailability) into the eye (i.e., eye tissue).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Henry whose telephone number is 571-272-0652. The examiner can normally be reached on 8.30am-5pm; Mon-Fri. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be

reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael C. Henry

3/5/07

Shaojia Anna Jiang, Ph.D.
Supervisory Patent Examiner
Art Unit 1623

March 3, 2007.